

REMARKS/ARGUMENTS

In the office action dated March 6 2006, the Examiner rejected Claims 1, 4-9, 21 and 22. Claims 2, 3 and 10-19 are allowed. The Applicants respectfully request reconsideration of the application by the Examiner in light of the following remarks. Claims 1-19 and 21-22 remain pending in this application.

Rejections under 35 U. S. C 103 (a)

Claims 1, 4, 8, 9 and 21 have been rejected as unpatentable over Lyons et al., U.S Patent 6,793,910 (hereinafter Lyons). Applicants respectfully traverse the rejection.

Lyons discloses apparatus for producing a synthesis gas using air, steam and hydrocarbon as reactants in a non-constant volume reactor. The reforming reactions involved in the process is listed in Chart 1, Col. 3, which includes combustion reactions to produce water and generate heat and steam reforming reactions to produce Hydrogen.

In contrary, claims 1 and 21 in the present application recite a system for producing hydrogen in a reforming reaction that do not involve any combustion reaction. The systems described in claims 1 and 21 do not involve or promote any combustion reaction, which is necessary for the process described by Lyons. Although Lyons reports that the amount of oxygen that is fed to the reactor is limited, so that the oxygen mass balance inhibit combustion reactions, the combustion step even if in a limited manner is essential for the success of the process described by Lyons. Lyons describes an apparatus for producing hydrogen in a reforming reaction using a spark plug (Figures 1-14 as shown by Lyon) for starting the combustion reaction. The system used for the reforming reaction used in the present application does not require the spark plug as the reforming reaction is completely devoid of any combustion reaction. Therefore it is not obvious for a person skilled in the art to modify the apparatus described by Lyons to achieve the configurations of the system described in the present application.

As per MPEP 2143.02 " The prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success." Lyons does not suggest any improvement/modification or operation of the reforming system by totally eliminating the combustion step. As the process described by Lyons is adiabatic (no heat supplied from outside), the limited combustion is expected to play a very important role in the entire reforming process, as the steam methane reforming reaction is endothermic.

Therefore, the Applicants respectfully submit that the examiner has failed to establish a prima facie case of obviousness and claims 1 and 21 are patentably distinct from the applied references for the reasons discussed above. Claims 4, 8 and 9 depend directly or indirectly from claims 1. Therefore claims 4, 8 and 9 are similarly allowable over the applied references.

Claim 1 and 4-9, 21 and 22 have been rejected as unpatentable over Lyons et al., U.S Patent 6,793,910 (hereinafter Lyons) as applied to claims 1, 4, 8-11 and 14-21 above and further in view of Kesker et al., U.S Patent 6,066,307 (herein after Kesker). Applicant respectfully traverses the rejection.

As discussed above, claims 1 and 21 are patentably distinct from the applied references for the reasons

discussed above. Claims 4-9 and 22 depend directly or indirectly from claims 1 or 21. Therefore claims 4-9 and 22 are similarly allowable over the applied references.

Allowable subject matter

Claims 2-3 and 10-19 are allowed.

Summary

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

By: /Patrick Patnode/
Patrick K. Patnode
Reg. No. 40,121
General Electric Company
Building K1, Room 3A66
Schenectady, New York 12301
Telephone: (518) 387-5286